

1 **TRACK ASSEMBLY FOR TRACK-GUIDED TOY VEHICLES**2 BACKGROUND OF THE INVENTION

3 1. Field of the Invention

4 The present invention relates to a track assembly, and more particularly
5 to a track assembly for track guided toy vehicles.

6 2. Description of Related Art

7 A track assembly provides a path for track guided vehicles so that the
8 track guided vehicles are able to travel on the track assembly. With reference to
9 Fig. 6, a conventional track assembly (5) is shown and has track units (50)
10 interconnected with one another. Each track unit (50) includes two tracks (51)
11 mounted on top of a base (52). A connecting plate (53) is securely connected to
12 one of the tracks (51). The base (52) has a cutout (521) defined in a first end of
13 the base (52) and a boss (522) formed on a second end of the base (52) and
14 opposite to the cutout (521). Therefore, when two track units (50) are connected,
15 the boss (522) from one track unit (50) is received in the cutout (521) of another
16 track unit (50). As a consequence of the connection between the two track units
17 (50), the connecting plate (53) of one track unit (50) is engaged with one of the
18 two tracks (51) of another track unit (50). Thereafter, when electricity is
19 provided to the track assembly (5), the track guided toy vehicle, i.e., a toy train, a
20 slot racing car, is able to run on the track assembly (5). Due to the connecting
21 plate (53), the overall appearance of the track unit (50) is ruined and the track
22 unit (50) is very dangerous in that the protrusion of the connecting plate (53) may
23 easily hurt the track guided vehicle player, especially children.

24 To overcome the shortcomings, the present invention tends to provide an

1 improved track assembly to mitigate the aforementioned problems.

2 **SUMMARY OF THE INVENTION**

3 The primary objective of the present invention is to provide an improved
4 track assembly which is safe to the player and easy for assembly.

5 Another objective of the present invention is to provide a connecting
6 plate fixture under the track assembly such that after the connection between two
7 track units, the engagement between the two connecting plate fixture is secured.

8 Other objects, advantages and novel features of the invention will
9 become more apparent from the following detailed description when taken in
10 conjunction with the accompanying drawings.

11 **BRIEF DESCRIPTION OF THE DRAWINGS**

12 Fig. 1 is a perspective view of the track assembly of the present
13 invention;

14 Fig. 2 is an exploded perspective view of one track unit of the track
15 assembly of the present invention;

16 Fig. 3 is an enlarged exploded perspective view of a connecting plate
17 fixture of the track unit of the track assembly of the present invention;

18 Fig. 4 is a top plan view showing the connection between two
19 connecting plate fixtures from two track units;

20 Fig. 5 is a cross sectional view showing the engagement between the
21 connecting plate and the track; and

22 Fig. 6 is a perspective view of a conventional track assembly.

23 **DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT**

24 With reference to Figs. 1 and 2, the track assembly (1) in accordance

1 with the present invention has multiple track units (10). Each track unit (10)
2 includes a supporting plate (11) with two T-shaped tracks (12) movably mounted
3 on the supporting plate (11). The supporting plate (11) has multiple pairs of
4 widthwise L-shaped retainers (111) formed on a top face of the supporting plate
5 (11). Each retainer (111) defines therein a path (112) to correspond to the T-
6 shaped track (12) such that each track (12) is able to be slidably received in the
7 path (112) and thus retained by the retainers (111). Two pairs of widthwise
8 through holes (13,13') are defined through the top face of the supporting plate
9 (11).

10 Two connecting plates fixture (2) are provided at two opposite ends
11 under the supporting plate (11) and orientated to opposite directions relative to
12 each other. With reference to Fig. 3, each connecting plate fixture (2) includes a
13 connecting plate seat (21), a first connecting plate (22) securely mounted on the
14 connecting plate seat (21) and having a first flat engaging end (221) and an open
15 end (222) oppositely formed relative to the first flat engaging end (221) and a
16 second connecting plate (23) securely mounted on the connecting plate seat (21)
17 beside the first connecting plate (22) and having a second flat engaging end (231)
18 and a pointed end (232) oppositely formed relative to the second flat engaging
19 end (231). A first spring (24) and a second spring (25) are respectively provided
20 to the first connecting plate (22) and the second connecting plate (23).

21 The connecting seat (21) is substantially L-shaped and thus has a vertical
22 portion and a horizontal portion. The connecting plate seat (21) has a first
23 channel (211) defined in a top face of the vertical portion of the connecting plate
24 seat (21) to correspond to and receive therein the first connecting plate (22) and

1 having a first space (212) defined in a joint between the vertical portion and the
2 horizontal portion to be in communication with the first channel (211) to
3 correspond to and receive therein the first flat engaging end (221) and a second
4 channel (213) defined in top face of the horizontal portion of the connecting
5 plate seat (21) beside the first channel (211) and having a second space (214) in
6 communication with the second channel (213) to correspond to and receive
7 therein the second flat engaging end (231). Furthermore, the connecting plate
8 seat (21) has a first positioning hole (215), a second positioning hole (216), a
9 first hook (217) formed on a side face of the vertical portion and a second hook
10 (218) formed on the side face of the vertical portion of the vertical portion and on
11 top of the first hook (217).

12 With reference to Fig. 4, when the first connecting plate (22), the second
13 connecting plate (23), the first spring (24), the second spring (25) and the
14 connecting plate seat (21) are combined, it is noted that the first connecting plate
15 (22) is received in the first channel (211) and the first flat engaging end (221) is
16 received in the first space (212). The second connecting plate (23) is received in
17 the second channel (213) to have the pointed end (232) extending out of the
18 second channel (213) and the second flat engaging end (231) is received in the
19 second space (214). A first positioning rod (14) extending from a bottom face of
20 the supporting plate (11) extends into the first positioning hole (215) and a
21 second positioning rod (15) extending from the bottom face of the supporting
22 plate (11) extends into the second positioning hole (216) such that engagement
23 between the supporting plate (11) and the connecting plate seat (21) is secured.
24 Before the engagement between the supporting plate (11) and the two connecting

1 plate seats (21) is finished at opposite ends of the supporting plate (11), with
2 reference to Fig. 5, the first spring (24) is sandwiched between the first flat
3 engaging end (221) and the second spring (25) is sandwiched between the
4 second flat engaging end (231). First distal ends of both the first spring (24) and
5 the second spring (25) are received in the through holes (13) to engage with a
6 bottom side face of the tracks (12). Second distal ends of both the first spring (24)
7 and the second spring (25) are engaged with the first flat engaging end (221) and
8 the second flat engaging end (231) respectively.

9 Referring to Fig. 4, it is noted that when two track unit (10) are to be
10 connected, the pointed end (232) and the open end (222) from one track unit (10)
11 are inserted into the open end (222) and the pointed end (232) of the other track
12 unit (10) respectively. Due the engagement between the first connecting plate
13 (22) of one track unit (10) with the second connecting plate (23) of the other
14 track unit (10) and the engagement between the second connecting plate (23) of
15 one track unit (10) and the first connecting plate (22) of the other track unit (10),
16 the two track units (10) are connected. In order to further enhance the connection
17 between the two track units (10), the first hook (217) and the second hook (218)
18 from one track unit (10) are respectively hooked to the second hook (218) and
19 the first hook (217) of the other track unit (10) when two different track units (10)
20 are combined.

21 Via the first and second springs (24,25), the first and second connecting
22 plates (23,24) are connected to the two tracks (12). Furthermore, due to the
23 engagement between two track units (10) via the first and second connecting
24 plates (23,24) from one track unit (10) and the second and first connecting plates

1 (24,23), an electrical connection between two track units (10) is finished.
2 Because the connection between two track units (10) is beneath the track units
3 (10), the overall appearance of the track unit (10) is tidy and accidental damage
4 to the player is thus avoided.

5 It is to be understood, however, that even though numerous
6 characteristics and advantages of the present invention have been set forth in the
7 foregoing description, together with details of the structure and function of the
8 invention, the disclosure is illustrative only, and changes may be made in detail,
9 especially in matters of shape, size, and arrangement of parts within the
10 principles of the invention to the full extent indicated by the broad general
11 meaning of the terms in which the appended claims are expressed.